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Section 45

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N15-8 Portugal

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Figure 1: Organisation of Veterinary Services in Portugal, 1961.

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## A. General

Periodic serious outbreaks of animal diseases have imposed a heavy burden on Portugal's agricultural programs and have delayed planned self-sufficiency in livestock and livestock products. Portugal's veterinary services, despite relatively strong manpower resources, have been unable to effectively cope with destructive animal disease invasion or provide the necessary improvements in animal health and management. In 1957 the veterinary service was reorganized in an attempt to improve the deficiencies resulting from a system obviously out of date, established in 1918. It is too early to determine whether or not this reorganization will affect animal health and livestock productivity but, despite the occurrence of at least three major epizootics in the past four-year period, there has been a moderate but steady increase in cattle and sheep production. However, pig and goat production has declined during the same period. Swine decreases may be partly attributed to the serious outbreaks of hog cholera and African swine fever occurring in the past four years.

The contributions of livestock and livestock products from the Azores and Madeiras to Portugal are small, since most of these products are consumed locally.

Animal diseases communicable to man are relatively well controlled in Portugal but sanitary precautions for processing and marketing livestock products leave much to be desired. Centralized government control over local sanitary supervision of

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livestock products does exist, but the functional aspects are left to municipal or private services of variable efficiency. Furthermore, the inspection and quarantine services designed to prevent introduction of diseases from outside sources have proved ineffective. At least a part of the animal health and sanitation problems in Portugal stem from a lack of financial support for essential programs. 1/8/14/36/39/43/47/

#### B. Environmental factors affecting health

1. Topography and climate -- Continental Portugal, about the size of the state of Indiana, has limited land resources for a livestock industry capable of providing adequate animal products for its 8,300,000 human population. Only about one-fifth of the arable land, which constitutes 40 percent of the total land area, is used for livestock production. A large share of pasture or grazing areas are in low-producing mountain areas of the north or in arid cork growing areas of the south. The overseas metropolitan territories of the Madeira and Azores potentially capable of some increased livestock increases are currently barely supplying local requirements. 1/ 14/ 19/ 43/ 47/

2. Socio-economic pattern -- There is very little specialized livestock production in Portugal. Most of the cattle are small native type used principally for draft power. Swine, sheep and goats are kept by small holders with little knowledge of modern breeding or management improvement. The average Portuguese farmer is suspicious of government intervention in both livestock management and animal health matters. Control over sanitary processing of livestock products in rural areas is neglected. 1/ 14/ 19/ 47/

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## 3. Animal and plant life

## a. Animals

- (1) Flies - Gnats, sand flies (Culicoides), are vectors of bluetongue, a serious virus disease of sheep introduced into Portugal in 1956.
- (2) Ticks and mites - A considerable variety of ticks transmitting a number of important diseases have been identified in Portugal. A number of mites are also responsible for severe debilitating conditions in sheep and swine. The more important ones and the diseases they cause, or are responsible for transmitting, are:

<u>Vector</u>	<u>Disease</u>
<u>Boophilus spp.</u>	
<u>Haemaphysalis spp.</u>	
<u>Ixodes ricinus (Linn.)</u>	Babesiasis
<u>Ixodes ricinus (Linn.)</u>	Anaplasmosis
<u>Hyalomma rufipes glabatra</u>	Rickettsiosis
<u>Sarcoptes scabiei</u>	Mange
<u>Psoroptes communis ovis</u>	Sheep scab or scabies

- (3) Mollusks - Limnaea (Galba) truncatula and Limnaea (Stagnicola) palustris are intermediate hosts of Fasciola hepatica, which causes severe liver damage in sheep and cattle.

- (4) Worms - A large number of worms cause serious parasitism in livestock in Portugal. Several are of considerable public health significance. The more important ones and the conditions they produce are:

<u>Parasite</u>	<u>Condition</u>
<u>Cysticercus cellulosae</u>	pork measles
<u>Cysticercus bovis</u>	beef measles
<u>Echinococcus granulosus</u>	intestinal tapeworm infestations in canines hydatid disease in all domestic animals

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<u>Parasite</u>	<u>Condition</u>
<u>Nematoda</u>	gastroenteritis in all domestic animals
<u>Fasciola hepatica</u>	liver fluke disease in sheep and cattle
<u>Dictyocaulus filaria</u>	lung worm infestation of sheep
<u>Dictyocaulus viviparus</u>	lung worm infestation of cattle

(5) Wild animals - Wolves (Canis lupus) may be of significance in the spread of rabies and its introduction from Spain. 9/ 11/ 19/ 29/ 30/ 59/ 60/

#### b. Nutrition

b. Food supply and distribution -- Continental Portugal imports some meat from foreign countries to augment its meager domestic production. The Madeiras and Azores are essentially self-sufficient and, in recent years, the Azores have been able to provide a small supply of specially inspected meat to the United States Air Force Base on the island of Terceira. Both Portugal and the outlying islands are net exporters of milk and milk products and the Azores are supplying a considerable quantity of milk to the United States Air Force Base. 31/ 41/ 43/ 44/

c. Food sanitation, storage and technology -- Food sanitation, including the processing and marketing of milk and meat, is not of particularly high order even in the major urban areas. In rural areas methods of handling products of animal origin are primitive. In cities such as Lisbon and Oporto the inspection and distribution of meat and milk is supervised by veterinarians, and modern facilities have been developed. Refrigerated storage is available for handling the small volume of frozen meat imported from foreign countries.

In the Azores, modern milk and meat processing facilities have been established through the assistance of the United States Air Force. The sanitary processing of

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these products is supervised by Portuguese veterinarians and the high standards required by U.S. military veterinary regulations are met. 1/ 2/ 14/ 30/ 31/ 44/ 46/ 50/

### C. Diseases

2. Diseases of animals -- Animal diseases in general are not well controlled and periodic extensive outbreaks of various diseases take a heavy toll. In recent years several exotic diseases have gained entry despite the application of quarantine and inspection procedures. Many of the animal health problems are considered relatively serious public health hazards, particularly because of the traditional tendencies of the people in many areas to consume raw or unprocessed livestock products.

#### a. Prevalent animal diseases

(1) African swine fever -- African swine fever, formerly confined to certain African regions, was introduced into Portugal probably from one of the country's colonial areas in 1957. In retrospect, the disease is caused by an extremely durable virus which is suspected of having been carried in meat or sausage scraps that ultimately were fed as garbage to swine. The disease spread rapidly through fifteen provinces and remained undiagnosed for some time because of its similarity to European type hog cholera.

Since no vaccine exists to protect swine against this highly virulent disease, losses were extremely heavy in 1957 and 1958. Portuguese authorities reported the disease eradicated as a result of the swine slaughter and sanitary programs in 1958, but the disease reappeared in 1960 with even greater losses than in the 1957-58 outbreak. Furthermore, the disease invaded Spain in 1960 and is now a serious threat to other important swine raising areas of Europe. Its possible eventual extension to the Americas has prompted the United States Department of Agriculture to establish

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a research project on the disease in Spain and also to participate in conducting a training course in diagnosis at a Spanish research center. 1/ 12/ 17/ 18/ 38/ 42/ 61/

(2) Bluetongue -- Bluetongue, another serious African virus disease primarily affecting sheep, has also invaded Portugal. The disease caused high mortality in 1956 and 1957, when it first appeared, but fortunately an effective vaccine had been developed in South Africa and, although the disease still exists in Portugal and Spain, losses have been reduced considerably. However, research has revealed that an unknown reservoir of the virus probably exists and since the disease is transmitted by the ubiquitous Culicoides there is little hope of relief from the costly and constant requirement for annual immunization of the major part of Portugal's sheep population. 1/ 9/ 13/ 16/ 24/ 25/ 33/ 35/

(3) Foot-and-mouth disease -- At least two strains of the foot-and-mouth disease virus have been responsible for periodic outbreaks of this disease during the past ten years; a continuous reinfection takes place across the Spanish-Portugal frontier. In addition to vaccination using imported vaccines, strict sanitary measures and restricted movement orders are invoked. Portugal is now a participant in the European Commission for the Control of Foot-and-Mouth Disease and is in the process of establishing a foot-and-mouth disease institute for typing and vaccine production. The disease is estimated to be one of the most costly among those existing in Portugal. 6/ 7/ 30/ 36/ 37/ 56/ 51/

(4) Brucellosis -- Brucellosis, particularly that caused by Brucella melitensis, is common throughout Portugal. The association of people with goats and the contact with raw milk have resulted in hundreds of human cases of this disease. An eradication program has been established but little progress has been made since

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the tests for the disease in goats is unreliable and an effective caprine vaccine has not been developed. Brucellosis in cattle, while less serious, is still a major disease problem and one for which there appears to be little immediate hope for effective control. Some advances have been made in testing cattle and vaccinating calves in recent years. Incentive pay for high quality milk from herds free of brucellosis and other diseases has materially reduced the incidence of infection in the Azores. 1/ 9/ 14/ 19/ 31/ 36/ 46/ 50/

(5) Cysticercosis -- Cysticercosis is widespread in swine and moderately prevalent in cattle. Since there is little control over stray dogs in slaughter areas and no program for antihelminthic treatment of these animals exists, the disease is continuously perpetuated. The lack of efficient meat inspection systems and the common habit of eating raw or partially cooked sausage make this disease a serious threat to the human population. 1/ 2/ 2/ 19/ 30/ 34/ 36/

(6) Newcastle disease -- Newcastle disease seriously interferes with the development of an efficient poultry industry. The disease is particularly difficult to control in small farmyard flocks where regular vaccination is impractical and difficult. Since Portugal is deficient in cereal grains that can be used for poultry feeds, the outlook for modern poultry production system under which Newcastle disease prevention is practical appears unlikely. Losses from this disease seriously reduce the availability of eggs and poultry meat for human consumption. The stimulation of efficient poultry production in the Azores has occurred through the offer of the United States Military services to purchase local poultry products and a disease control program, including vaccination against Newcastle disease, is underway. 2/ 15/ 19/ 31/ 34/ 36/

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## b. Other important animal diseases -- Other important animal diseases in

Portugal are scabies (Psoroptes communis ovis), distomatosis and anthrax in sheep, pasteurellosis, hog cholera and erysipelas in swine, contagious bovine pleuropneumonia, babesiasis, anthrax and mastitis in cattle. 2/ 30/ 36/ 59/ 60/ 62/

## D. Veterinary medical organization and administration

## 1. Civilian

a. Organization -- The national veterinary services of continental Portugal are the responsibility of two Directorates, a General Directorate of Livestock Services reporting through the Secretary of Agriculture to the Ministry of Economy and a National Department of Livestock Production reporting to the same Ministry through a Secretary of Commerce. The first Directorate, the one concerned with the chief veterinary functional activities, is composed of three main departments, central services, regional services, and investigation and experimental services. The Central Services Department has five main sections, dealing with (1) sanitation, (2) public health, (3) animal improvement, (4) documentation, economic studies and inquiry, and (5) technical assistance and extension service. It has also an administrative and a technical council. Veterinary services of ports and frontiers, which includes fishing ports and quarantine stations, are added responsibilities of this department. The Regional Services Department's sectional responsibilities include, (1) two delegations or committees for import-export, (2) livestock administration, (3) four island veterinary committees, (4) regional laboratories for veterinary services, and (5) animal husbandry. The Investigation and Experimental Service Department supervises (1) the National Laboratory for Veterinary Investigation, (2) the National Animal Husbandry Station, (3) Livestock Improvement Stations,

Figure 1

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(4) Animal Genetics Stations, (5) Poultry Stations, and (6) Animal Technology Stations.

The National Directorate of Livestock Production has one technical department with several subsections dealing with commercial problems of various livestock products.

The veterinary services organization in the Madeira and Azores varies only slightly in that administrative affairs are handled differently.

The National Veterinary Services have no connection with or control over the Overseas Veterinary Services, which have responsibility for veterinary affairs in the Colonies.

The National Veterinary Services rely on municipalities, both on the continent and on the outlying islands, to provide the essential health and sanitation services to individual farmers and to perform the meat and food inspection duties. Only a few private practitioners exist in continental Portugal and none are active in the Azores.

The Directorate of Livestock Services' share of the national budget amounted to \$1,835,194, which was 0.05 percent of the total continental budget in 1960. This, however, does not represent the true figure for veterinary expenditure since the Directorate of Livestock Production was allocated a separate appropriation, municipalities contributed to veterinary services and the budgets for the Azores and Madeira are completely separate. 1/ 22/ 31/ 32/ 34/ 36/ 63/

#### b. Legal controls

(1) Licensure -- A degree in Veterinary Medicine is the minimum requirement for appointment to any public post or function. For appointment to the National Veterinary Investigation Laboratory a candidate must participate in an open competitive examination. 1/ 63/

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(2) Quarantine -- The General Regulations on Animal Health, published in 1839, is the basic law governing inspection and quarantine of animals and products of animal origin. It has been amended many times by Decree-Laws; the latest, No. 39,209, in 1953, specifically applies to food hygiene, animal quarantine and import-export certification of animals and animal products. 1/ 63/

(3) Inspection -- Generally adequate regulations have been enacted or decreed to provide legal force to sanitary inspection's import requirements and to control animal diseases through notification and quarantine. Severe penalties can be levied for infraction of regulations. Enforcement of regulations is variable from time to time and place to place. 1/ 63/

c. Professional veterinary organization -- Portugal has two professional veterinary associations. The Portuguese Society for Veterinary Science (Sociedade Portuguesa de Ciencias Veterinarias) and a National Association of Veterinary Surgeons. The first is exclusively scientific in nature and membership is voluntary. In addition to publishing the veterinary scientific journal (Revista Ciencias Veterinarias), the Society has legal representation on the Technical Council of the Directorate of Veterinary Services and close relationship with the Ministry of Education. The National Association of Veterinary Surgeons was established in the interests of the profession and to regulate private practice. Membership is voluntary, but it is a requirement for teaching or eligibility for municipal competitive examination. 1/ 30/ 63/

d. Veterinary research -- While veterinary research activity offers considerable prestige and Portuguese veterinarians as a group seek to expand and develop research programs, the quality and achievements of their efforts have not been outstanding. Review of research literature over the past few years reveals little ingenuity or originality. 1/ 29/ 30/

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f. Emergency veterinary services -- No organized sector of the veterinary services exists for emergency situations. Since the services as a whole are highly nationalized, it would seem that emergency organization to combat serious epizootics would be practical. However, the introduction of foot-and-mouth disease and more recently a serious outbreak of African swine fever have shown that Portugal is unable to effectively mobilize its professional and auxiliary staff to control such plagues. 1/ 30/ 61/ 64/

2. Military veterinary services -- A Military Veterinary Corps, currently staffed by thirty officers, is primarily engaged in food sanitation for military units of Department of Defense. The Portuguese military establishment maintains only a few horses and a small police dog unit, and, therefore, requires little veterinary services in this field. The military veterinary services are not engaged in any research activity. 1/ 30/ 63/

Figure 1

#### E. Veterinary manpower

Although the total veterinary manpower ratio to livestock population is better than in many European countries, it is apparent from the animal disease situation that organization, distribution and utilization of veterinary staff and technicians, are inefficient. Portuguese authorities state <sup>that</sup> a shortage of veterinarians exists and offer this as a factor in the continuing animal disease problems.

Portuguese veterinary authorities listed seven hundred fifty-four veterinarians active in 1959 and defined their distribution as follows:

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1) Government officials (including those employed by Municipal or Corporative Organization)	186
2) Diagnostic and Research Institutes	67
3) Municipal Veterinary Officers	250
4) Teaching Staff of the Higher School of Veterinary Medicine	16
5) Army Veterinary Officers	35
6) Private Practice	200
Total	754

Note: Some of those listed in Private Practice are engaged as part-time Municipal employees.

The Azores have 11 veterinarians in service categories 1 and 3 above.

Veterinary training is the responsibility of the Higher School of Veterinary Medicine (Escola Superior de Medicina Veterinaria) in Lisbon (38-43N - 9-03W).

Admission is conditional on passing a qualifying examination in addition to completion of normal primary and secondary educational requirements.

Figure 1

The veterinary course spans five years and successful completion plus six months approved official service leads to a degree and professional status of Veterinary Surgeon. A doctorate requires completion and defense of a thesis. A course in Tropical Veterinary Medicine is open to Veterinary surgeons and a diploma in this curriculum is required for practice in Portuguese overseas territories. 1/8/11/22/32/34/63/

#### F. Veterinary medical facilities

The organization of veterinary medical facilities is an extremely complex system in Portugal. Many laboratories, particularly of the smaller diagnostic type, are scattered, with separately directed government divisions, and their responsibilities are not clearly defined.

The most important veterinary facility is the National Laboratory for Veterinary Investigation, formerly the Central Laboratory of Veterinary Pathology, Lisbon.

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responsible for, (1) animal disease diagnosis, (2) preparation of biologicals and pharmaceuticals, (3) biological and pharmaceutical testing, (4) research and special teaching. This laboratory has two main branch units at Oporto (41-09N - 8-37W) and Evora (33-34N - 7-54W), concerned mainly with diagnostic procedures, and four others situated in Viseu (40-39N - 7-53W), Mirandela (41-29N - 7-11W), Costello Branco (39-49N - 7-30W), and Faro (37-01N - 7-56W).

A large equipment and supply depot is maintained in Lisbon to supply regional veterinary offices.

A system of 24 regional veterinary offices operating in 18 provinces under the Regional Services Department, provides minor diagnostic services, supply, distribution and direction over municipal services.

Quarantine facilities under the Regional Service Department have been established at Lisbon and Oporto.

Numerous Zootechnical Stations doing some veterinary work are scattered throughout the country.

Many of the responsibilities of the various subsections appear to overlap and a distinct duplication in services sometimes occurs.

The Higher School of Veterinary Medicine, Lisbon, cooperates with the government laboratories in some research and diagnostic studies.

Private veterinary practice is extremely limited in Portugal because most preventive animal disease measures are supported and provided by the government. <sup>1/8/11/34/63/</sup>

#### G. Veterinary supplies and materials

The National Laboratory for Veterinary Investigation or its main branch units produces the major part of biological requirements in Portugal and compounds some of

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the pharmaceuticals used. Limited amounts of biological and pharmaceutical products are produced by Portuguese firms; however, most of this type material plus antibiotics are imported from other European countries and distributed either through government veterinary stations or through private agencies dealing in this type product.

All of Portugal's foot-and-mouth disease vaccine has been imported, mostly from the Netherlands, but plans are underway to establish a special laboratory for local production. Portugal has access to sufficient biologicals and drugs for its somewhat limited animal health programs. Any significant increase over that currently used is dependent on an increase in government supported or sponsored animal health programs.

1/ 6/ 14/ 15/ 34/ 63/ 64/  
programs.

H. Reference data -- Not included in this report.

I. Comments on principal sources

1. Evaluation -- A great deal of current information on veterinary services and animal health is readily available. Information relative to section B-1 and 2, Topography and climate and Socio-economic pattern, as it affects animal health, is quite complete. The information on the various aspects of Nutrition, B-4, from Portuguese sources, is extensive but often refuted by reports from outside sources.

Section C, in connection with animal diseases, lacks specific detail simply because Portugal reports these data in general terms only.

The reports on veterinary organization, manpower, facilities and supplies, are numerous and the Portuguese information is substantiated by reports from foreign observers.

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